

## SEQUENCE LISTING

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<120> HYPOALLERGENIC ALLERGY VACCINES BASED ON THE TIMOTHY GRASS  
 POLLEN ALLERGEN PHL P 7

<130> 24741-1539

<140> 10/529,441  
 <141> 2005-03-25

<150> PCT/EP03/010701  
 <151> 2003-09-25

<150> EP 02021837.6  
 <151> 2002-09-27

<160> 11

<170> PatentIn version 3.3

<210> 1  
 <211> 78  
 <212> PRT  
 <213> Phleum pratense

<400> 1  
 Met Ala Asp Asp Met Glu Arg Ile Phe Lys Arg Phe Asp Thr Asn Gly  
 1 5 10 15  
 Asp Gly Lys Ile Ser Leu Ser Glu Leu Thr Asp Ala Leu Arg Thr Leu  
 20 25 30  
 Gly Ser Thr Ser Ala Asp Glu Val Gln Arg Met Met Ala Glu Ile Asp  
 35 40 45  
 Thr Asp Gly Asp Gly Phe Ile Asp Phe Asn Glu Phe Ile Ser Phe Cys  
 50 55 60  
 Asn Ala Asn Pro Gly Leu Met Lys Asp Val Ala Lys Val Phe  
 65 70 75

<210> 2  
 <211> 36  
 <212> PRT  
 <213> Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 2

Ala Asp Asp Met Glu Arg Ile Phe Lys Arg Phe Asp Thr Asn Gly Asp  
 1 5 10 15

Gly Lys Ile Ser Leu Ser Glu Leu Thr Asp Ala Leu Arg Thr Leu Gly  
 20 25 30

Ser Thr Ser Ala  
 35

&lt;210&gt; 3

&lt;211&gt; 43

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 3

Ser Ala Asp Glu Val Gln Arg Met Met Ala Glu Ile Asp Thr Asp Gly  
 1 5 10 15

Asp Gly Phe Ile Asp Phe Asn Glu Phe Ile Ser Phe Cys Asn Ala Asn  
 20 25 30

Pro Gly Leu Met Lys Asp Val Ala Lys Val Phe  
 35 40

&lt;210&gt; 4

&lt;211&gt; 78

&lt;212&gt; PRT

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;223&gt; Description of Artificial Sequence: Synthetic peptide

&lt;400&gt; 4

Met Ala Asp Asp Met Glu Arg Ile Phe Lys Arg Phe Asp Thr Asn Gly  
 1 5 10 15

Asp Gly Lys Ile Ser Leu Ser Ala Leu Thr Asp Ala Leu Arg Thr Leu  
 20 25 30

Gly Ser Thr Ser Ala Asp Glu Val Gln Arg Met Met Ala Glu Ile Asp  
 35 40 45

Thr Asp Gly Asp Gly Phe Ile Asp Phe Asn Ala Phe Ile Ser Phe Cys  
 50 55 60

Asn Ala Asn Pro Gly Leu Met Lys Asp Val Ala Lys Val Phe  
 65 70 75

<210> 5  
 <211> 78  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 5  
 Met Ala Asp Asp Met Glu Arg Ile Phe Lys Arg Phe Asp Thr Asn Gly  
 1 5 10 15  
 Ala Gly Lys Ile Ser Leu Ser Ala Leu Thr Asp Ala Leu Arg Thr Leu  
 20 25 30  
 Gly Ser Thr Ser Ala Asp Glu Val Gln Arg Met Met Ala Glu Ile Asp  
 35 40 45  
 Thr Asp Gly Asp Gly Phe Ile Asp Phe Asn Ala Phe Ile Ser Phe Cys  
 50 55 60  
 Asn Ala Asn Pro Gly Leu Met Lys Asp Val Ala Lys Val Phe  
 65 70 75

<210> 6  
 <211> 78  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
 peptide

<400> 6  
 Met Ala Asp Asp Met Glu Arg Ile Phe Lys Arg Phe Asp Thr Asn Gly  
 1 5 10 15  
 Ala Gly Lys Ile Ser Leu Ser Ala Leu Thr Asp Ala Leu Arg Thr Leu  
 20 25 30  
 Gly Ser Thr Ser Ala Asp Glu Val Gln Arg Met Met Ala Glu Ile Asp  
 35 40 45  
 Thr Asp Gly Ala Gly Phe Ile Asp Phe Asn Ala Phe Ile Ser Phe Cys  
 50 55 60  
 Asn Ala Asn Pro Gly Leu Met Lys Asp Val Ala Lys Val Phe  
 65 70 75

<210> 7  
 <211> 85  
 <212> PRT  
 <213> *Alnus glutinosa*

<400> 7  
 Met Ala Asp Asp His Pro Gln Asp Gln Ala Glu His Glu Arg Ile Phe  
 1 5 10 15  
 Lys Cys Phe Asp Ala Asn Gly Asp Gly Lys Ile Ser Ala Ser Glu Leu  
 20 25 30  
 Gly Asp Ala Leu Lys Thr Leu Gly Ser Val Thr Pro Asp Glu Val Lys  
 35 40 45  
 His Met Met Ala Glu Ile Asp Thr Asp Gly Asp Gly Phe Ile Ser Phe  
 50 55 60  
 Gln Glu Phe Thr Asn Phe Ala Arg Ala Asn Arg Gly Leu Val Lys Asp  
 65 70 75 80  
 Val Ala Lys Ile Phe  
 85

<210> 8  
 <211> 80  
 <212> PRT  
 <213> *Cynodon dactylon*

<400> 8  
 Met Ala Asp Thr Gly Asp Met Glu His Ile Phe Lys Arg Phe Asp Thr  
 1 5 10 15  
 Asn Gly Asp Gly Lys Ile Ser Leu Ala Glu Leu Thr Asp Ala Leu Arg  
 20 25 30  
 Thr Leu Gly Ser Thr Ser Ala Asp Glu Val Gln Arg Met Met Ala Glu  
 35 40 45  
 Ile Asp Thr Asp Gly Asp Gly Phe Ile Asp Phe Asp Glu Phe Ile Ser  
 50 55 60  
 Phe Cys Asn Ala Asn Pro Gly Leu Met Lys Asp Val Ala Lys Val Phe  
 65 70 75 80

<210> 9  
 <211> 84  
 <212> PRT  
 <213> *Olea europaea*

<400> 9  
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 1 5 10 15  
 Arg Phe Asp Ala Asn Gly Asp Gly Lys Ile Ser Ser Ser Glu Leu Gly  
 20 25 30

Glu Thr Leu Lys Thr Leu Gly Ser Val Thr Pro Glu Glu Ile Gln Arg  
 35 40 45  
 Met Met Ala Glu Ile Asp Thr Asp Gly Asp Gly Phe Ile Ser Phe Glu  
 50 55 60  
 Glu Phe Thr Val Phe Ala Arg Ala Asn Arg Gly Leu Val Lys Asp Val  
 65 70 75 80  
 Ala Lys Ile Phe

<210> 10  
 <211> 85  
 <212> PRT  
 <213> Betula pendula

<400> 10  
 Met Ala Asp Asp His Pro Gln Asp Lys Ala Glu Arg Glu Arg Ile Phe  
 1 5 10 15  
 Lys Arg Phe Asp Ala Asn Gly Asp Gly Lys Ile Ser Ala Ala Glu Leu  
 20 25 30  
 Gly Glu Ala Leu Lys Thr Leu Gly Ser Ile Thr Pro Asp Glu Val Lys  
 35 40 45  
 His Met Met Ala Glu Ile Asp Thr Asp Gly Asp Gly Phe Ile Ser Phe  
 50 55 60  
 Gln Glu Phe Thr Asp Phe Gly Arg Ala Asn Arg Gly Leu Leu Lys Asp  
 65 70 75 80  
 Val Ala Lys Ile Phe  
 85

<210> 11  
 <211> 79  
 <212> PRT  
 <213> Brassica rapa

<400> 11  
 Met Ala Asp Ala Glu His Glu Arg Ile Phe Lys Lys Phe Asp Thr Asp  
 1 5 10 15  
 Gly Asp Gly Lys Ile Ser Ala Ala Glu Leu Glu Glu Ala Leu Lys Lys  
 20 25 30  
 Leu Gly Ser Val Thr Pro Asp Asp Val Thr Arg Met Met Ala Lys Ile  
 35 40 45  
 Asp Thr Asp Gly Asp Gly Asn Ile Ser Phe Gln Glu Phe Thr Glu Phe  
 50 55 60

Ala Ser Ala Asn Pro Gly Leu Met Lys Asp Val Ala Lys Val Phe  
65 70 75